

# NEWSLINE

Published weekly for employees of Lawrence Livermore National Laboratory

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## FROM THE DIRECTOR'S OFFICE

Jeff Wadsworth

### Groups focus on growing Lab's intellectual assets

Over the years, the Laboratory has actively sought ways to protect and invest in its intellectual capital. Recruiting and retaining the brightest minds in science and engineering are crucial to the Lab's continued success in remaining a premier institution to serve the nation's interests and needs.

To make the Laboratory an attractive environment for both current and future employees, we must continually seek input to assess key workplace issues and to identify suggestions for improvement. This was one of the goals of the series of three employee focus groups, held on March 22, following our Science Day celebration. We promised to report back to all employees the issues raised by these groups. In this column, I'd like to share with you the issues identified in the focus groups.

First, a few words on how the focus groups were formed. The groups were divided into three demographic areas: early career scientists and engineers and postdocs; mid-career scientists and engineers; and senior scientists and engineers. The groups represented diverse scientific fields, race, ethnicity, and gender. Focus group members were chosen based on recommendations from the programs and directorates while ensuring balance and broad coverage of the Laboratory's diverse groups and disciplines. Approximately 60 employees participated.

The concept of the Science Day celebration and the focus group sessions was suggested by Gen. John A. Gordon, administrator of the National Nuclear Security Administration (NNSA) and was successfully held at the three NNSA national laboratories — Livermore, Los Alamos, and Sandia.

The purpose of the focus groups discussions was to assess the health of science and technology and to provide helpful input to DOE and the laboratory. Vic Reis, the former assistant secretary for DOE Defense Programs, facilitated the three LLNL sessions, which were also attended by Dr. Maureen I. McCarthy, NNSA chief scientist, and several members from the Office of Science, in particular, James F. Decker, acting director, Office of Science and Toni Joseph, director, Laboratory Policy and Infrastructure Management.

Each focus group lasted approximately one to one-and-a-half hours. A report of these focus groups was submitted to Gen. Gordon. Similar reports were also issued from the focus groups held at Sandia and Los Alamos national laboratories. Some of the key issues that came out of the LLNL focus group dis-

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PHOTO COURTESY OF S&TR

Members of the mouse genomics group include (from left) Laura Chittendon, Xiaojia Ren, team leader Lisa Stubbs, Xiaochen Lu, Paramvir Dehal and Joomyeong Kim. The researchers, from the Joint Genome Institute, compared human chromosome 19 with similar sections of mouse DNA to confirm gene estimates.

## DNA link between man and mouse

Earlier this year, researchers mapping the human genome estimated that human DNA contains about 30,000 genes.

Now, based on the first-ever look at comparable sections of human and mouse DNA, a team of Walnut Creek-based Joint Genome Institute (JGI) scientists has confirmed that estimate as roughly accurate.

The team, led by Lab biomedical scientist Lisa Stubbs, details its findings — based on comparing human chromosome 19 with similar sections of mouse DNA — in last Friday's edition of the journal *Science*.

In addition to Stubbs, the study's analysis was performed by Paramvir Dehal, a UC Davis

graduate student, Livermore computer scientist Art Kobayashi and a team of JGI computer scientists and biologists.

The sequencing of the mouse DNA, which was done between April and October of last year, was led by former Joint Genome Institute Director Elbert Branscomb, current JGI Director Trevor Hawkins and sequencing director Paul Predki.

"There had been speculation that aligning the human and mouse DNA sequence might reveal many more genes," Stubbs said. "However, if chromosome 19 is indicative of

See **DNA**, page 4

## MMED a one-stop shop for materials that matter

By Sheri Byrd

NEWSLINE STAFF WRITER

How do those fast-growth KDP crystals become transformed into high precision flat optics for NIF? When the Medical Technology Program needs precision micro-machined tubing to build their breast cancer-detecting Smart Probes, who do they call? Who diamond-turns myriad optics, from a few millimeters to more than 1-meter in diameter, for



NASA, DoD and the Air Force's Space-Based Laser? When a

See **MMED**, page 7

## Love labors to put end to current cancer treatments

By Elizabeth Campos Rajs

NEWSLINE STAFF WRITER

UCLA professor and noted breast cancer specialist Susan Love envisions a time in the not too distant future when breast cancer — and especially today's treatment of it — will be a thing of the past.

"I'm very, very excited. We're heading into a whole new era with breast cancer. I think we can eradicate this disease and I don't think it's a pipe

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Site 300**

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## LAB COMMUNITY NEWS

### Weekly Calendar

Technical Meeting Calendar, page 4

Saturday  
**14**

There will be a **scheduled power outage** from 7 a.m. Saturday to 3:30 p.m. Sunday in the following locations: Bldgs. 438, 531, 532, 533 and 534 and Trailers 4297, 4299, 4325, 4385, 5399, 5425, 5426 and 5475. There will also be a scheduled power outage in Bldg. 312 from 7 a.m. to 3:30 p.m. on Saturday only. Contact: Mark Cardoza, 3-0490.

Monday  
**16**

The next lecture in the Glenn T. Seaborg Institute's Actinide Science Summer School Program will be presented by Kenton Moody at 10 a.m. in Bldg. 151, room 1209. The title of his talk is "**Nuclear Forensics.**" (Foreign nationals may attend if an appropriate security plan is on file.) Contact: Joanne Maxwell, 4-4344.

Tuesday  
**17**

In preparation for the change to new Library system software, the TID Main Library is demonstrating WebCat, its **new-browser based search system** on Tuesdays in the Main Library (Trailer 4727) from 11:30 a.m. to 12:45 p.m. through Sept. 25. Interested users should check at the reference desk to determine at which workstation the demo is being held. The changeover to the new software will occur in September and WebCat is expected to be fully operational by Oct. 1.

Wednesday  
**18**

The second of three talks in the African American Lecture Series will be presented by Winifred Burks-Houck at 10 a.m. in the Bldg. 361 auditorium. Burks-Houck, who is an organic chemist and environmental analyst in the Environmental Protection Department, will discuss, "**ChemTrack: How is it Improving Chemical Management at LLNL?**" The lecture series was established to create a forum for Lab African-American scientists and engineers to showcase their work. The lecture, hosted by Chemistry & Materials Science in collaboration with the Affirmative Action and Diversity Program, is unclassified.

...

For the latest Apple computer news, watch **Steve Jobs' keynote address** at the MacWorld convention, which will air on Lab TV Channel 7 at 9 a.m. Contact: Candace Gittins, gittins1@llnl.gov.



LAB TV

BROADCAST  
SCHEDULE

The DDLS talk by UCLA professor and noted **breast cancer specialist Susan Love** will be rebroadcast on Lab TV Channel 2 on Thursday, July 19, at 10 a.m., noon, 2, 4 and 8 p.m., and Friday, July 20, at 4 a.m.

### Scholarship winners

AD for Administration Jan Tulk, center, recently presented awards to this year's recipients of the Lab's Undergraduate Scholarship Awards. They are Edith Greene, left, who works in Defense and Nuclear Technology, and Valerie Stanton, right, who works in Mechanical Engineering. More details about their undergraduate studies and awards will be in next Friday's *Newsline*.

PHOTO BY MICHAEL ANTHONY/TID



### Laboratory receives high honor from Red Cross

The Laboratory recently received one of the American Red Cross' highest honors — the Clara Barton award — for exhibiting qualities Clara Barton showed when she founded the organization.

For more than 15 years, the Laboratory has held quarterly blood drives on site and is now the number one contributor in Northern California, according to Ken Giannotti, manager of LLESA.

He and Marie Teuscher, also of LLESA, accepted the award on behalf of all Lab employees in late June at the annual meeting of the Santa Clara Valley Chapter of the American Red Cross and the Northern California Region Blood Services, held in San Jose.

"The Laboratory and its employees are pleased to be able to play some small role in helping the American Red Cross with its mission to save people's lives," Giannottie said.

The Lab was one of two Bay Area organizations to receive the award. The other was Advanced Micro Devices.

The Lab was nominated for the award by its local chapter for a number of reasons, including hosting drives at peak times, such as holiday shortages; for adding several drives to its schedule each year, such as hosting special Type O drives; and for assisting in the overall mission of the American Red Cross by offering new volunteer programs and promoting other services of the American Red Cross such as CPR training.

The Lab was also commended for serving as the test site for on-line registration, which has led to the national American Red Cross organization implementing the system nationwide. LLNL was the first institution in the country to do on-line registration.

### Volunteers needed for Diversity Day on the Green

Participants are needed for the third annual Diversity Day on the Green Celebration, Thursday, Aug. 9, 11:30 a.m. to 1 p.m., at the LLESA pool/picnic area.

The Day on the Green, sponsored by the Affirmative Action & Diversity Program, promotes cultural awareness through performances, ethnic food, cultural booths, an ethnic/cultural clothing contest and much more. This year's theme is "One World, One People."

AADP is looking for volunteers to participate in this multicultural celebration. If you are interested in doing a cultural display booth, contact Michele Cardenas, 3-2796.

### RETIREMENT

The retirement party for Carol Alonso, assistant director for Internal Affairs in the National Security Office, has been rescheduled for Thursday, July 26, at 11:30 a.m. at Retzlaff Vineyards in Livermore.

Alonso is retiring after 29 years of service at the Laboratory.

The cost for the party is \$15, which includes lunch and gift. (Drinks sold separately.)

RSVP by July 20 to Cathy Benjamin, Monica Navarra or Lisa Plamer at 3-6812. Please make checks payable to Lisa Palmer.

### IN MEMORIAM

#### LeRoy Stamer

Services will be held for LeRoy Herman Stamer, a former Protective Services officer, at 7 p.m. Thursday, July 19, at Livermore Mortuary. He died July 7 at Kaiser Hospital in Walnut Creek after a long illness. He was 72.

Stamer worked at the Lab for more than 30 years as a Protective Services officer, retiring in 1986 and then returning as a security escort. He left the Lab in 1993.

He was born in Granville, Iowa, and was raised on a farm, where he lived until joining the Army and serving in the Korean War.

He moved to the Bay Area in 1959 and began work at the Lab in 1960.

Stamer was a member of Sons in Retirement (SIRS) and enjoyed hunting, hiking, camping and working with firearms.

Survivors include his wife of 51 years, Lorraine; daughters Jacquelyn and Janice; five granddaughters and two great grandchildren. Another daughter, Joyce, preceded him in death.

Contributions in his memory may be made to Our Savior's Lutheran Church Memorial Fund, 1385 S. Livermore Ave., Livermore, 94550 or a charity of choice.

### Newsline

*Newsline* is published weekly by the Internal Communications Department, Public Affairs Office, Lawrence Livermore National Laboratory (LLNL), for Laboratory employees and retirees.

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# AROUND THE LAB



## New policy for disposal of storage media



### CIO UPDATE

BY TED MICHELS

LLNL's Computer Security Council has approved a new policy: "Disposing of Unneeded Unclassified Computer Storage Media."

The policy, P-2339, states: "Unneeded, readable/writable unclassified computer storage media must be destroyed using an acceptable method of destruction before it is discarded. All accumulations of unclassified computer storage media awaiting destruction must be protected from unauthorized access." The reason for destroying unneeded media is to ensure that no sensitive unclassified or proprietary information is disclosed to unauthorized individuals.

#### Implementing the Policy

The policy specifies acceptable methods of destroying unclassified media as follows:

- Degauss the media with a degausser approved by Computer Security Operations (CSO). Approved degaussers are located on-site at Livermore Computing and at Distribution, Utilization and Sales.

- Send the media to the LLNL Hammer Mill.
- Destroy the media by any other means approved by CSO.

LLNL funds the Distribution, Utilization and Sales (DUS) organization, which operates a degausser

for destroying unclassified media. See [https://www-ais.llnl.gov/llnl\\_only/docs/bsd/property/DUS/DUS\\_brochure.html](https://www-ais.llnl.gov/llnl_only/docs/bsd/property/DUS/DUS_brochure.html) for more information.

Alternatively, as of Monday, July 30, the Hammer Mill staff will pick up non-classified paper and media. In order to initiate this work request, please call the Plant Engineering Customer Service Center at 29444, or initiate a work request by using the Plant Engineering Web page at [http://www-r.llnl.gov/plant\\_eng/](http://www-r.llnl.gov/plant_eng/). To establish an ongoing service, contact Lee Beato at 4-4569.

Directorates are responsible for protecting media awaiting destruction by using a "drop only" container, a locked door, or other measures approved by the cognizant OISSO. Lockable disposal containers are available from the LLNL custodial service. Contact Lee Beato at 4-4569.

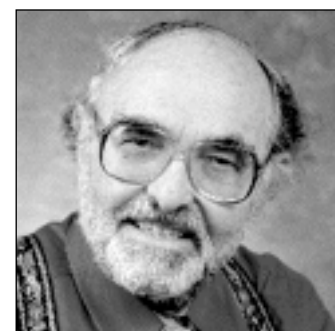
This policy is available on the Web at: <http://www-r.llnl.gov/cso/Pubs/u-docs/P2339.pdf> and is another small piece of the process by which LLNL removes potential avenues by which our sensitive information might be inadvertently compromised.

*Ted Michels is the principal deputy associate director for Computation and LLNL's acting chief information officer (CIO).*

## DDLS speaker to present evidence of an accelerated expansion of the universe

Learn more about the "Evidence for Accelerated Expansion of the Universe" when Gerson Goldhaber, UC Berkeley physics professor, speaks as part of the Director's Distinguished Lecturer Series. The lecture takes place at 3:30 p.m. Tuesday, July 17, in the Bldg. 123 auditorium. Director Bruce Tarter invites all employees to attend.

Goldhaber and the Supernova Cosmology Project team have observed more than 80 distant type 1a supernovae, the most distant ever observed. In studying these supernovae, they found evidence of red shift, an increase in wavelength resulting from loss of energy.



Gerson Goldhaber

Goldhaber will discuss the evidence for the acceleration of the expansion of the universe and how the universe passed from a decelerating phase to an accelerating phase. He will also talk about project plans to build a two-meter telescope on a satellite.

Goldhaber's research spans nuclear emulsion, bubble chamber and electronic detector techniques, meson and antiproton interactions, and high-energy e+e- annihilation physics. He is the co-recipient of the 1991 WKH Panofsky Prize of the American Physical Society. This prize, the American Physical Society's highest award for experimental particle physics, was awarded to Goldhaber and French physicist Francois Pierre for their discovery of charmed mesons in 1976.

The lecture will be broadcast on Lab Channel 2 Thursday, July 26, at 10 a.m., noon, 2, 4, and 8 p.m., and Friday, July 27, at 4 a.m.

## Comments sought on browser standard

LLNL's Information Architecture project is responsible for developing the standards for hardware and software that conform to the requirements of Laboratory users. Part of the process is to offer proposed standards to the Laboratory community for comments and suggestions.

The latest proposed standard specifies a set of software products that define a baseline of functionality for Web browsers on LLNL desktops. Draft standard IA-1501 is available for employee comment until close of business Monday,

July 23. Laboratory users can view the full text of this proposed standard at: <http://ia.llnl.gov/rfc/ia1501/ia1501.html>.

This draft standard references the existing desktop standards, IA-7501 and IA-7502. The hardware and software tables used by these standards have been recently updated and are available at: <http://dag.llnl.gov/default.lasso>. To comment on this proposed standard, click on the comments button on the IA-1501 Website, or e-mail the Information Architecture Office at <mailto:ia-rfc@llnl.gov>.

## NEWSMAKERS

### Hossain named ASCE fellow

Quazi Hossain, an engineer in the New Technology Engineering Division at the Lab, was recently honored with the title of fellow by the American Society of Civil Engineers (ASCE).

In order to qualify as a fellow of the society, a civil engineer must be an active member of the ASCE for at least 10 years, be a legally registered engineer, and demonstrate notable achievements in the advancement of engineering profession. Hossain was already recognized for such achievements when he received an ASCE Certificate in 1992 for distinguished service while serving as the chairman of the ASCE Working Committee on High Level Radioactive Waste Repository.

To advance to fellow, Hossain had to be nominated by a specialty committee of ASCE and three ASCE Fellows. Promotion of a member to Fellow is considered one of the highest honors given by the ASCE.



ASCE will recognize Hossain and other recently elected fellows at a banquet next year in Los Angeles.

Hossain joined the Lab in 1992, working on projects related to natural hazard mitigation for nuclear facilities. He was the principal investigator for NRC's Advanced Light Water Reactor Project and the principal author of the DOE standard on seismic classification of structures, systems, and components. He was also a key contributor to the DOE standard on aircraft crash on hazardous facilities, the DOE project on Tornado Hazard Characterization and the DOE project on the Development of Seismic Design Criteria for the Yucca Mountain Project. Hossain began working for the Lab's Hazard Mitigation Center in 1998 and was named a co-director of the center this year.

### Johnson joins state engineers' board

The California Board of Registration for Professional Engineers and Land Surveyors elected Lab employee David K. Johnson to its Electrical Engineering Technical Advisory Committee (EE-TAC) at its June meeting in Sacramento. Johnson is currently the Site Utilities Division leader, and has worked at the Lab for 11 years.

Johnson explained the job of the board as "regulating the practice of engineering in

California." As a part of the Department of Consumer Affairs, the board's mission is to safeguard the life, health, property and public welfare by regulating the practice of professional engineering and professional land surveying.

"Basically, the board registers professional engineers and licenses professional land surveyors," he said. "We also enforce California law with regard to the practice of engineering and land surveying." Johnson has been a registered engineer since 1968, and has been registered in California since 1983.

The board first advertised for engineers to fill positions on the Technical Advisory Committee almost two years ago. Johnson applied and was one of two electrical engineers selected to serve.

"One of my jobs is to investigate technical issues for the board and advise them on electrical engineering issues," Johnson said. "One thing the committee has talked about is the electricity crisis in the state, and I imagine that there will be technical issues that might be related to that."

Johnson received his bachelor's degree in electrical engineering from Iowa State University, and his MBA in marketing from the University of Iowa. He is also a recipient of the vice president's National Performance Award (the "Hammer Award") for saving money in government.





## NEWS YOU CAN USE

### DNA

*Continued from page 1*

other chromosomes, the estimate of 30,000 genes is fairly accurate."

Before the comparison of human and mouse DNA, researchers had thought that human chromosome 19 had about 1,100 genes.

With the comparative analysis, about 1,200 were found, Stubbs said.

"We've wanted to compare human and mouse DNA to help us find human genes and to figure out how they function," she said.

"Another reason is that researchers use mouse models for studying diseases and testing medicines, and to do this properly, it's important to understand the differences and similarities between the two species."

Through their study, the JGI team found apparent additional sections of more than 300 human genes, confirmed the existence of other computer-predicted genes and provided evi-

dence to discard other gene predictions, according to Stubbs.

The team discovered "candidate" regulatory sequences for genes throughout chromosome 19. Regulatory sequences tell individual genes when and in which cells to activate.

In the study, the researchers found that about 90 percent of the human genes in chromosome 19 were also located in similar sections of mouse DNA, Stubbs said.

The approximately 10 percent of human or mouse genes that are unique to each other are the type of genes that tend to duplicate, or make extra copies, over time.

These genes include zinc finger genes, which produce proteins that control the activity levels of other genes; olfactory receptor genes, which are responsible for the sense of smell; and the genes encoding receptors for pheromones, which serve as a chemical attractant for mating and other social behavior.

Mouse and human DNA contain different

complements of these types of genes because active duplications have created new genes specifically in primates or rodents.

Established in 1996, the JGI is a consortium of scientists, engineers and support staff from three Department of Energy national laboratories — Lawrence Berkeley, Lawrence Livermore and Los Alamos. The institute performed the sequencing for three human chromosomes — 5, 16, and 19.

Other members of the sequencing or sequence analysis teams were: Anne Olsen, Peg Folta, Susan Lucas, Miriam Land, Astrid Terry, Carol Ecale Zhou, Sam Rash, Qing Zhang, Laurie Gordon, Joomyeong Kim, Christopher Elkin, Martin Pollard, Paul Richardson, Dan Rokhsar and Ed Uberbacher.

In the future, the LLNL research team plans to try to confirm the apparent gene extensions and test the function of the regulatory sequences, determining how and where the genes are activated, Stubbs said.

## Technical Meeting Calendar

Friday  
**13**

### INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Hybrid Intelligent Systems for Industrial Data Analysis," by Arthur Kordon, Dow Chemical

Company. 10 a.m., Bldg. 551W, room 1400 (Del Valle Room, uncleared area). Contacts: Ghaleb Abdulla, 3-5947, or Leslie Bills, 3-8927.

### MATERIALS SCIENCE & TECHNOLOGY

"Plutonium Surface Science: A Study of Internal and External Corrosion," by Paul Roussel, Atomic Weapons Establishment, U.K. 3:30 p.m., Bldg. 235, room 1090 (Gold Room, uncleared area). Coffee and cookies will be served at 3:20 p.m. Contact: Thomas E. Felter, 2-8012. Foreign nationals may attend if an appropriate security plan is on file.

### MATERIALS RESEARCH INSTITUTE SUMMER INSTITUTE

"Large-Scale Electronic Structure Calculations," by Francois Gygi, LLNL. 10 a.m. and 2:30 p.m. Bldg. 661, room 7. Contact: Mike McElfresh, 2-8686, or Miriam Rinnert, 2-7369.

### INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS

"High Resolution Soft X-Ray Spectra of Seyfert Galaxies with XMM-Newton," by Masao Sako, Columbia University. Noon, Bldg. 319, room 205 (open area). Joanna Allen, 3-0621.

Monday  
**16**

### INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Parallel and Robust Multigrid Techniques on Structured Grids," by Ignacio Llorente,

Universidad Complutense, Madrid. 10 a.m., Bldg. 451, room 1025 (uncleared area). Contacts: David Keyes, 2-1325, or Leslie Bills, 3-8927.

### H DIVISION

"Computational Biochemistry and Materials Science at IBM Zurich Research Laboratory," by Wanda Andreoni, IBM, Switzerland. 1:30 p.m., Bldg. 219, room 163 (uncleared area).

Contacts: Giulia Galli, 3-4223, or Darlene Klein, 4-4844.

### GLENN T. SEABORG INSTITUTE

"Nuclear Forensics," by Kenton Moody, LLNL. 10 a.m., Bldg. 151, room 1209 (uncleared area). Foreign nationals may attend if an appropriate security plan is on file. Contact: Joanne Maxwell, 4-4344.

### V DIVISION

"X-Ray Spectroscopic Investigations of Highly Charged Krypton Ions with Relevance for Fusion Research," by Tino Fuchs, Robert Bosch, GMBH, Reutlingen. 10:30 a.m., Bldg. 219, room 163 (uncleared area). Contact: Peter Beiersdorfer, 3-3985.

### MATERIALS SCIENCE & TECHNOLOGY

"Nano-Scale Characterization of Oxide Material by Atomic Resolution Z-Contrast Imaging and EELS," by Robert Klie, University of Illinois. 10 a.m., Bldg. 235, gold room (uncleared area). Contacts: Wayne King, 3-6547, or Roberta Marino, 3-7865.

Tuesday  
**17**

### SYSTEMS & NETWORK DEPARTMENT

"FileMaker Pro: The latest tools, tips, and techniques, plus a demonstration of FileMaker Pro 5.5." 10 a.m., Bldg. 361 auditorium (uncleared area). Contact: Candace Gittins, 4-4952.

### INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"TAU Performance System: Developments and Evolution," by Allen Malony, University of Oregon. 10 a.m., Bldg. 451, room 1025 (uncleared area). Contacts: Jeff Vetter, 4-6284, or Leslie Bills, 3-8927.

Wednesday  
**18**

### INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"A Fast Poisson Solver for Irregular 3-D Regions," by Anne Greenbaum, University of

Washington. 2 p.m., Bldg. 551W, room 1400 (Del Valle Room, uncleared area). Contacts: David Keyes, 2-1325, or Leslie Bills, 3-8927.

### CHEMISTRY & MATERIALS SCIENCE

"ChemTrack: How Is It Improving Chemical Management at LLNL?" by Winifred Burks-Houck,

LLNL. 10 a.m., Bldg. 361 auditorium (uncleared area). Contact: Winifred Burks-Houck, 2-6365.

### INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Parallel Data Access in Heterogeneous Environments with Storage Tank," by Randal Burns. 10:30 a.m., Bldg. 451, room 1025 (uncleared area). Contact: Terry Jones, 3-9834

Thursday  
**19**

### SOFTWARE TECHNOLOGY CENTER

A comprehensive software development seminar that will cover the following topics: 1)

Unified Change Management (UCM) on Rational ClearCase and ClearQuest; 2) ClearDDTS and ClearQuest; 3) Rational Enterprise Suites Tool; 4) Rational RequisitePro and Rose; 5) Rational Test Studio Tools; 6) Rational Purify, Quantify, Purecoverage. Rational Suite's tool integration improves communication both within teams and across team boundaries. Contact the STC, 2-4287, for information or if you are interested in other topics.

### H DIVISION

"Tension Fields in Elastic Membranes," by David Steigmann, UC Berkeley. 3 p.m., Bldg. 219, room 163 (open area). Contacts: Jim Belak, 2-6061, or Donna Vercelli, 2-0976.

Monday  
**23**

### CHEMISTRY AND MATERIALS SCIENCE, NEW FRONTIERS SYMPOSIUM

"The Failure of Materials by Fatigue: From Aero-Engines to

Bio-Prosthetics and MEMS Devices," by Robert O. Ritchie, Lawrence Berkeley National Laboratory. 3 p.m., Bldg 235, Gold Room. Contact: Wayne King, 3-6547, or Kristine Ramirez, 3-4681.

**The deadline for the next Technical Meeting Calendar is noon, Wednesday, July 18.**

Send your input to [tmc-submit@llnl.gov](mailto:tmc-submit@llnl.gov). For information on electronic mail or the newsgroup [llnl.meeting](mailto:llnl.meeting), contact the registrar at [registrar@llnl.gov](mailto:registrar@llnl.gov).

NEWS OF NOTE



New lightning detection and warning system for Site 300

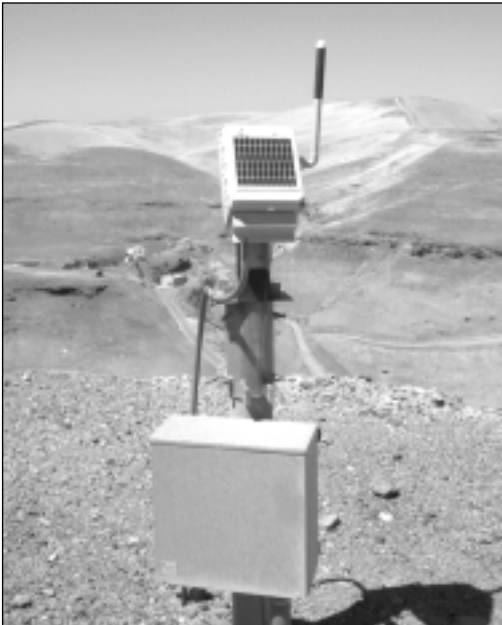
Site 300’s lightning detection and warning system (LDWS) has been upgraded and related procedures updated.

The new system replaces the old lightning detection probes with electric field mills and a new electrical storm identification device, or ESID, which optically detects and measures the Site’s distance from lightning flashes. Electric field mills, called EFM’s, detect the strength of the local electric field gradient, indicating the potential for lightning.

“The new detection equipment improves our ability to accurately detect potential lightning conditions and safely shut down explosives operations during those times,” says Site 300 Manager Larry Sedlacek. “We’ll be better able to gauge when employees working in the field need to evacuate to a protected building.”

The updated procedure introduces a new term, “lightning watch,” to provide an early indication of lightning potential without necessarily requiring any sitewide action. However, individual organizations may develop their own procedures to respond to such early warnings.

The procedure describes the conditions that determine the Site 300 lightning status, based upon the LDWS. Site 300 lightning conditions include:



COURTESY OF DAN KNIGHT

The electrical storm identification device.

- “All clear,” a status in effect when there are no ESID flash detections closer than 30 miles to Site 300, all EFM measurements are less than 2 kilovolts

per meter (kV/m) for at least 15 minutes, and there are no sightings of lightning.

- “Lightning watch,” a status initiated by an ESID flash detection distance that is greater than five miles but less than 30 miles from Site 300.
- “Lightning alert,” a status initiated by an ESID flash detection distance of less than five miles, or by an EFM measurement greater than 2.0 kV/m.

During a lightning alert, all personnel are required to evacuate to a safe location that is either a hardened control room of an explosives facility, or a location specifically identified as a safe location in a Facility Safety Plan, or outside of the inhabited building distance (normally 1,250 feet) from an explosives facility or explosives location.

“We rarely get lightning strikes at Site 300,” Sedlacek says, “but we can expect to get 10-20 alerts a season because of general storm conditions and the presence of lightning in neighboring areas.”

Employees at Site 300 are warned of lightning alerts by building page, radio and alpha pages. Information is also posted on the Web.

To see the complete procedure or for more information, check the Web at: [http://www.llnl.gov/site300/PDFs/Final\\_Lightning.pdf](http://www.llnl.gov/site300/PDFs/Final_Lightning.pdf).

Site 300 travel rules enhance safety and protect the environment

Procedures for off-road travel at Site 300 have been revised to enhance safety and environmental protection in field areas away from experimental test site paved roads and fire trails.

The updated procedures emphasize the responsibilities of off-road travelers and their supervisors. The off-road traveler’s responsibilities include: conducting travel under the controls contained in an integrated work sheet (IWS); assuring that off-road travel is required for work duties, and demonstrating familiarity with additional and area-specific requirements affecting restricted travel plans.

The traveler’s supervisor is responsible for ensuring that travel off paved roads is required for the work to be performed and that the work environment requiring restricted travel is evaluated and

controls put in place to address any hazards. These must be accurately reported in the governing safety documentation.

Off-road or restricted travel at Site 300 is prohibited without an approved IWS and permission from the functional area supervisor responsible for the travel area. Restricted travel is only allowed if required for work. Site 300 is divided into “functional areas” defined by their experimental or operational activities and overseen by a supervisor.

Travel across open terrain is prohibited without direct permission from the Site 300 manager’s office.

Other requirements:

- Depending on travel activities and conditions, properly equipped four-wheel drive vehicles may

be required by the supervisor or the management chain authorizing the work.

- Two-way radios communicating on the Site 300 trunked radio system are required for each vehicle, group or hiker conducting restricted travel. Radio users shall be knowledgeable in how to operate the radios.

- All persons conducting restricted travel at Site 300 are required to carry a copy of the “Restricted Off-Pavement Travel at Site 300 Procedure” and the attached map with them or in their vehicle.

Maps may be obtained from the Site 300 manager’s office. For a complete copy of the procedures or for more information, check the Web at: [http://www.llnl.gov/site300/PDFs/Final\\_OffRoad.pdf](http://www.llnl.gov/site300/PDFs/Final_OffRoad.pdf).

Bone marrow or stem cell transplants can play vital role in treatment of cancer

By Stephanie Esposito

NEWSLINE STAFF WRITER

“Chemo can save your life, but it’s also toxic,” Cherie Evans began in her recent lecture discussing, “When the Disease Can Be Cured But the Treatment Could Kill You: The Role of Stems Cells in the Treatment of Cancer.”

Cancer touches all of us in one way or another, and chemotherapy and/or radiation therapy is often the only way to kill malignant cells. Yet, at the same time, these treatments destroy the good cells that live in the body.

As chief medical officer of the American Red Cross Blood Services in Northern California, Evans’ talk focused on expanding blood and bone marrow donor pools and researching cellular therapies, such as bone marrow or stem cell transplants that help in treating cancer.

With new research on stem cell and cord blood transplants, doctors have been able to help restore the rapidly dividing cells in the bone marrow that were killed during treatment of the cancer. The stem cells are the source of all the body’s red and white blood cells, which carry oxygen and help fight infections, and platelets, which help in clotting blood. Once transplanted, the stem cells will travel into the bone marrow and begin to multiply, creating new and healthy cells to help the patient recover faster.

Evans called this, “Treating the cancer, (and then) rescuing the patient.”

However, the main problem behind life-saving

bone marrow transplants is finding the perfect match for the recipient.

“There are thousands and thousands of bone marrow types,” Evans said. “Only a third of people have good matches within their family, so most marrow is found through unrelated sources.”

These unrelated stem cell sources can be collected from a donor’s blood, bone marrow, or through a new source called cord blood.

Cord blood transplantation uses the blood from the umbilical cord of a newborn baby or the placenta to transplant healthy stem cells into cancer patients. Until recently, the umbilical cord would have been thrown away, but this new procedure has led to a new and expanding source where stem cells can be collected.

What researchers have found is that the stem cells from cord blood are extremely immunologically naïve, which means that the cells don’t know what is foreign, therefore they can live in someone else’s bloodstream without a high chance of rejection.

“There are people who have waited years for acceptable bone marrow,” Evans said. “The cord blood will hopefully stop that, (or) lessen the time frame.”

Eligibility requirements to become a cord blood donor include being a healthy pregnant woman in her third trimester, between the ages of 18 and 40. The donor should be having a single birth — no multiples — and should also have no tattoos.

Evans went on to explain that the donating procedure does not interfere with the mother’s delivery.

After the birth, the blood and placenta is collected into a sterile bag, and once the blood is determined suitable, it is either transplanted or used for research.

In order to do this, the National Marrow Donor Program (NMDP) needs a diverse supply of donors. According to Evans, most of the 4 million volunteer donors in the NMDP registry are Caucasian, so there is a higher need for donors of Asian, Hispanic and African-American backgrounds.

As of now, stem cells have been used mostly with leukemia and lymphoma patients, but the procedure has also been successful with Hodgkin’s disease, severe aplastic anemia, and sickle cell anemia.

“We’re looking at new diseases and disorders to see if transplants will work with them too,” Evans said.

To find out more information on stem cells and on how to become a donor, visit the NMDP Website at <http://www.marrow.org>.

In addition, Evans stressed, that none of these life-saving procedures would be possible without support from donors whose red cells and platelets help keep patients alive while they wait for their bone marrow to again become functional. The American Red Cross Blood Services ensure that the American public will have the blood it needs, at the right place, the right time and in the right type. “A safe and adequate blood supply is our mission,” Evans said.

Blood donations and information on donation may be obtained by calling 1-800-GIVE LIFE or by logging on to the Website at <http://www.bloodonor.com>.





# CLASSIFIED ADS

See complete classified ad listings at  
<https://www-ais.llnl.gov/newsline/ads/>

**AUTOMOBILES**

1996 - Grand Cherokee, 45k miles, dk green, loaded, leather, cd changer, sunroof, \$17,000 obo. 925-373-3236

1994 - Pontiac Grand Am, 2dr, V6/auto, A/C, 115K miles, new tires, Good Cond.\$4,900 925-931-1467

94 - Dodge Intrepid ES 4 door sedan, metallic teal/green, fully loaded. 125K miles. Automatic, V6, leather seats, ABS. Good condition. \$7,500. 925-606-1691

1998 - Ford Ranger XLT Ext Cab, 6 cyl, 5-sp, 2-wheel drive, PS, PB, AC, CC, AF/FM/CASS, 27,000 miles, \$10,000 209-832-3310 209-832-3310

1992 - Lincoln Mark VII, with all factory options, black ext, light grey int, runs excellent, looks great, recently had trans. rebuilt, \$5500 obo, 510-538-7444

1998 - NISSAN Altima, white ext., gray int., PS/PB/PW, A/C, cassette, manual, 68k miles. New front brakes. Excellent condition. \$11500. 925-373-6538

1985 - Jeep Wagoneer, New custom made drive line, new front axel, new windshield, new tires, all electric \$ 1,500.00 209-832-3135

1990 - Toyota Corolla GT-S Sport Coupe 2D, Air Conditioning, AM/FM Stereo, cassette \$3300 obo; fair exterior, very good mechanical condition low mileage. 925-455-5323

1990 - Porsche 911 Carrera 4, Ex Condition, all options. \$23,500. 925-449-5918

2000 - Cadillac STS Seville, White Diamond, tan leather interior, 28K miles, loaded+, asking \$42K. 510-889-6510

1988 - First \$500.00 takes! Ford Temp GLS: stick, cruise, tape deck, AC (nneds repair), 150K, dependable, clean, comfy. Great for student! 925-449-7123

1974 - Datsun 260Z, early model, new suspension, new tires, needs restoration. \$1500 firm 925-449-9294

1998 - VOLVO S70 - Automatic, Cruise, Power windows/locks, New tires/brakes, Dealer serviced, Excellent Condition, 38Kmi., Great MPG. \$18,900 925-516-0425

1988 - Jeep Cherokee, Pioneer, 175,000mi. 4ltr. 6cyl. 5 speed, functional, but tired. \$800. evenings 209-931-6119

Rear seat for 1990 Plymouth Voyager, blue, excellent cond., B.O. 925-447-7148

1994 - Isuzu Rodeo, 5 spd, A/C, Pwr Pkg (PS, PW, PL, CC), Alarm System, Roof Rack, AM/FM/ Cassette. Good Condition, \$6,400/OBO. 925-449-5723

1992 - Ford Probe LX, 3L 6cyl.AC, P/S, P/B. Runs Good.Wht w/Blk trim. \$3200.00 O.B.O. 916-549-8377

1994 - FORD AEROSTAR van, Eddie Bauer Edition, purchase or take over payments. Excellent condition. 209-832-5875

1972 - Volkswagon convertible. Runs good,needs body work, and wing windows. \$2,000 obo 925-447-8095

1995 - Honda Odyssey EX - 6 pssgr minivan needs new home. 57900 mi., excel. cond. all pwr, new tires, sunroof, well maintained by orig. owner. \$16K 925-600-7953

1989 - Jeep Wrangler, Lift and Chrome packages, new tires and seats, bikini and full top, alarm system, removable AM/FM cassette, \$6500/OBO 925-443-7480

1989 - Ford Aerostar XL AC,PS,PW,PL,AM-FM Cassette, 173K miles. Good condition. \$3,800

obo. 925-449-1324

1995 - Pontiac Bonneville SE. Leather, all elec, new AC, new tires, 4-dr, spoiler, seats 6. Eye-catcher! Excellent condition. \$6,900. x4-3279, 209-858-1521

1978 - CHEVY CAPRICE, 2 door, ac, V8, must sale, \$2,500. Modesto. 209-492-0270

**AUTOMOBILE ACCESSORIES**

AC problems? Direct replacement for Freon 12 for sale, no retrofit required \$20/can 925-736-7799

4 Yokohama tires size 195-60-15, 2 new, 2 slightly used. \$150/OBO 510-732-5885

Set of four stock wheels with wheel covers and used tires from a 87 GMC 3/4 ton truck. Asking \$40/obo 209-892-5734

Tire chains: Sears 215/70R15, new \$20, used \$10, Campbell S class 185/75R14 new \$20 Campbell cable P185/70R14 used once \$20 925-443-2245

Rear seat for 1990 Plymouth Voyager, blue, excellent cond., B.O. 925-447-7148

Campershell and/or carpet kit from a 1986 toyota pick-up. Best offer. 952-443-4639

Bed Liner fits Chevy Shortbed Pickup \$75 obo. 209-838-3279

**BICYCLES**

Centurion 12 speed bike,black,good condition,\$30.00. 925-447-7190

26in blue Trek 820 mountain bike, \$150; 20in gray Viper BMX bike, \$75; 16in red training bike, \$35. 925-443-3106

**BOATS**

14 ft. Aluminum fishing boat w/ 15 hp Johnson motor. Freshly painted. \$1,300 as is. 925-454-9663

1986 Reinell, 18.5 ft., v8, with trailer. Open bow, ski/fish, Excellent condition \$6,000. 209-836-4973

Jet Skis. 1994 Yamaha PRO VXR; 1989 Kawasaki X-2. Good conidition. Shoreline trailer with center storage. \$3300.00 OBO 925-606-0722

**ELECTRONIC EQUIPMENT**

Satellite TV System - 9ft dish - Uniden SQ530 Receiver - All manuals. \$200/OBO 925-443-1769

10 Playstation CDs for sale. Many different titles. Good condition. 10.00 each or 75.00 takes all. 209-836-3062

**GIVEAWAY**

Moving, free formica sheets, misc lumber, furniture, lights, odds & ends. You pick up. 925-736-7799

Play structure: tower with awning, rope ladders, monkey bars. Needs new posts and paint. Have instructions. Disassembled. 925-606-9575

Refrigerator, Penncrest Model. Works great. White. Great for Garage. U-Haul. Discovery Bay 925-634-9784

25 inch Zenith color TV console, works ok, good for kids room. You haul. 925-447-3965

Hot Tub 7ft x 8ft, old but runs great! Needs to be removed from deck and hauled. 925-606-0359

Man's bike and woman's bike good for riding around the lab. 925-449-7262

German childrens books (many). For free to good home or organization! Will bring to Lab for pickup. 925-443-1673

**HOUSEHOLD**

Modern walnut office desk , Sony 17in TV , leather hi-back recliner with ottoman. No reasonable offer refused 925-736-7799

Framed painting by local artist Norma Webb - Collier Canyon Scene, 1980 - 32x44 \$175 925-447-8613

Leather recliner (green) \$150; 3 maple barstools \$75 925-443-5882

Loveseat, multi color excellent condition, \$350. Entertainment center, light wood, like new \$400. Recliner, Lane, blue, good condition, \$250. 925-455-5938

Bunk Bed-White Metal Bunk Bed Twin on Top-Double on Bottom Excellent Condition 510-791-8628

REFRIGERATOR/FREEZER, Montgomery Ward, 21 cu. ft., ice maker, almond color. Approx. 17 yrs. old. Never any problems. Excellent Condition. \$275/BO. 925-449-5667

Wall unit 3 piece 8ft wide \$250, desk wood foldup box \$100, dresser black oriental style \$100 925-371-1465

Cowboy boots - various styles, ladies size 8.5 -9, new or only slightly used, \$15-\$30. 925-443-9254

Simple black couch with big pillows. Very good condition, relatively new. \$70/bo. Moving out in middle of Aug. need to sell. 925-373-3148

Wicker Chest, 34x20x20, brown, good condition,\$20.00. 925-447-7190

AGAPANTHUS 4 inch and 16 oz cups, \$1.50 ea, will bloom next year blue flowers. 925-447-6192

Chest of drawers \$250; Dresser w oval mirror \$250; Single bed \$250; Motorized recliner chair \$250; Sofa hide-a-bed \$200; all \$1100; all exc. cond. 925-828-3143

Refrigerator - Sears Model 61720 Coldspot Frostfree Refrigerator-Freezer 17.1 Cubic Feet. Freezer on top. Very clean. \$75 - 925-443-1769

Crown reed organ, working antique, perfect manual, stops, original finish, \$990/B.O. 925-443-3106

Air Compressor - Campbell Hausfeld, 115 vac @ 15A, 11 gallon tank, 125 psi max, 8 scfm at 40 psi, little use, 3 yrs old, works great. 925-455-5439

Full size roll-top desk for sale, with chair. Medium dark oak/wood grain. Paid \$600. will sell for \$225.00 or best offer. 209-832-3991

Refrigerator/Freezer Sears. Good condition. \$125. 209-836-4361

Drapes 100 inch tall, light blue/Rose Floral, made for 59 inch square window, 6 matching swags like new 200.00 209-832-8072

Coffee table. Round oriental style in rosewood with black finish. 42 inches diameter, excellent condition. \$400/best offer. 925-443-3447

Washer & Dryer, Roper, large capacity, almond. Very good condition. \$300/pr. 209-892-4474

Outdoor Furniture - 6 high-back, royal blue chair cushions (seat - 20x21; back - 20x24), excellent condition, \$10 each. Chairs available for free. 925-443-7082

Bow front mahogany stained side board. 6 Dove-tailed drawers, 2 side cupboards. Very good condition. Lined silverware drawer. Picture available. \$150 510-530-1884

QUEEN BED w/box spring and frame \$35.00 Modesto, 209-492-0270

**LOST & FOUND**

LOST - Diamond stud earring . . . probably in or near LLNL pool on 7/5. Your help in finding this item is greatly appreciated. 925-371-8111

**MISCELLANEOUS**

Sega Dreamcast - w/ 2 games. Great game system for kids and adults. \$60 925-216-2080

Blood pressure monitor - one step auto inflation, like new \$50, Samsonite 24 inch hardside suitcase (wineberry) \$35 925-447-8613

High quality 12X24ft oval above ground pool. Four years old, very good condition, but needs new liner. \$850/obo 209-892-5734

Chandelier, Octagon. Antique-brass frame with clear, beveled glass. 21-inch wide. Like new condition. \$45. 925-484-0475

5000-watt generator. 2 years old. Has been garaged and well-maintained for emergency use. \$300. 925-454-8827

49er tickets: Sec 38, Row 10, Seats 1 & 2 \$100.00 pair (face value). Several games available. 209-544-8540

CANNA in 1 gal pots \$2ea, 5 gal \$5 ea, red flowers, new tropical orange. 925-447-6192

Moving Boxes-Commercial grade. Wardrobes, Dish Paks, X-large picture boxes, + Sm., Med., Lg. 925-449-5089

Massive Blowout Garage Sale 7/13-14, 9am-2pm. Household items and womens clothing/shoes. 4741 Oakforest Ave. Oakley. 925-634-3471

CONCERT - Destiny's Child, 3LW & DREAM at Chronicle Pavilion - Sat Sept 1/01 7pm. Sec 101, Row R, 4 seats together. \$100 each. 925-447-1428

Wheel chair \$175; Push chair \$100. exc. cond. 925-828-3143

49er tickets (2) vs. Seattle 8/25, 6:00p. Great seats. Face value \$50/each. 925-447-6784

Outdoor Extension Cord, 100 feet, orange, super heavy duty, 12-gage, 3-conductor. Barely used. \$40. 925-846-2708

**MOTORCYCLES**

1981 - Yamaha, IT465. Good original condition. \$750 OBO. Tom 925-449-5441

**PETS & SUPPLIES**

Free kittens. 10 week old rescued kittens need patience & TLC. Very playful, can be handled, but are still very shy. 925-606-0284

White bunny and cage free to good home. Very gentle. 209-835-2187

Akita - Male Puppy 9 weeks old, show quality but will sell to family home also. Health guarantee. \$600.00 Mopar Akitas 925-449-5626

Yellow Lab M AKC shots, dew claws removed, 10 weeks, \$500 925-449-7263

Blue & Gold Macaw. Goldie is a happy, healthy, talking pet that loves company. Cage included. \$1200/BO. 925-829-6203

2 cats need home. Male and Female, raised indoors both fixed and declawed. Please call Anika ASAP. 209-830-7223

Baby parakeets. Finger tame. \$20 925-447-8557

Ten gallon fish tank with filter and other accessories: \$30.00 . 925-829-6939

Large dog crate in good condition \$30.00 or best offer. 925-606-0755

Dog cage, train or transport. ~3x3x2 w/floor tray, exc cond. \$50 OBO 209-832-7630

Adult Male Rotweiller needs a home.

We are moving and can not take pets. We also have a large kennel for him that he sleeps in. Contact Jennifer 925-687-4616

Border Collie/Queensland Heeler Mix, male, 2 yrs. shots/neutered, good disposition, needs space to run and play. Small Fee 925-606-9129

Female Umbrella Cockatoo for sale. Hand tame, very friendly with cage. Asking for \$500.00 call me at home after 5:00 p.m. 209-543-9470

**RECREATION EQUIPMENT**

New dive equipment - XL wetsuit, fins, booties, gloves, compass, wgt. belt, ab bar, knife, etc. Sell for half price. 925-932-3839

Play structure slide, heavy gauge yellow plastic. \$50 OBO 925-462-5081

Kelty youth-size red sleeping bags, barely used, excellent condition, stuff sacks, \$40ea. 925-443-3106

2 room tent. Great condition. Bought tent trailer instead. \$40. 925-455-4896

Thousand Trails/NAACO Gold membership \$500 + transfer fee Of \$450 209-648-2150

Pool, above ground 15x4ft round. Upgraded ladder, cover, filter and many accessories. \$400. Call eves. 925-447-3178

Arbor Snowboard. Boots and Bindings, Mens size 10. All new, in the box! \$600. 925-640-7345

Golf bag, new, white w/black lettering, \$50 925-828-3295

Tunturi F570 Recumbent Exercise Bike. Very quite magnetic resistance moter. 5 program modes with 9 levels. \$300. 510-530-1884

Indoor rower - Concept II Model C with heart monitor, extra padding, documentation; excellent condition; great workouts; \$600, offers considered. 925-449-5748

Golf clubs wanted, mens left hand, starter set plus others. 925-600-0082

Nordic Track Challenger, heart/pulse monitor and operating manual. Outstanding condition. Price \$100.00. 209-529-1809

Complete diving outfit. Used 2 times. Suit, Regulators. gages,Bcd ,boots, gloves, weights& more. \$800.00 all 209-836-0631

1981 Dodge Motorhome, 50k miles, AT, PB, PS, new tires, Refrigerator, Furnace with control, roof air conditioner. In West parking lot. \$6,800/obo 408-499-3312

**RIDESHARING**

Express your commute, call 2-RIDE for more information or visit the web site at <http://www-r.llnl.gov/tsmp/> for more information

San Ramon - Bollinger Canyon/Dougherty area. Looking to start a carpool or join an existing one 925-292-7720, ext. 2-1859

Berkeley - Looking for a ride from Berkeley to work. 510-649-9282, ext. 44811

PATTERSON - 2000 Vanpool has seats available. Work hours 7:30-4:00. 209-892-2118, ext. 2-9502

Pleasanton - 2 summer students living in Stoneridge Apartments (near mall) would like to defray commute costs for an LLNL employee. 925-373-0670, ext. 4-6229

Oakland - Looking for people to carpool with from Oakland 5 days a week, 7:00am-3:30pm. Pgr. 00154. 510-482-9833, ext. 2-1971

Manteca - Need 4th person. Ride/drive alternate daily. Leave Manteca 6:30 AM, Leave LLNL 4:00 PM. 209-823-5593, ext. 3-8539

Due to space limitations, *Newsline* may withhold ads that have already run. They will still appear on the Web.

MMED

Continued from page 1

project team needs a set of custom-machined stainless steel pieces, and neoprene gaskets to fit them, and needed them yesterday, where can they go? If a Lab division needs parts manufactured from classified, radioactive or toxic materials, who can do that?

Manufacturing & Materials Engineering Division (MMED), the Lab's on-site storehouse of top-of-the-line machinists, precision engineers, nondestructive evaluation (NDE) and materials engineers and state of the art equipment, regularly tackles these tricky projects.

"We are a world-class machine shop — and so much more," said MMED Division Leader Hugh Watling. "If you come to us with just an idea — just a scribble on a napkin, we can help you define it, assemble it, inspect it and test it. We can even work with outside vendors."

Watling said that MMED's services are needed, and used, by nearly every program at the Lab, but that some may not realize just how extensive those services are. "We're concerned some areas may be developing capabilities or doing work offsite when we can better meet those needs here. We want everyone to know just how many ways we can be of service."

MMED's 250-employee roster claims the highest percentage of advanced degrees and the most senior engineering staff in all of Mechanical Engineering. "We have highly specialized engineers," Watling said, "national experts who are well known in their field, available for use on a very wide variety of engineering services."

The tip of MMED's service iceberg includes:

- MMED's large 200,000-square-foot complex, housing machining tools, ultra-precise diamond turning equipment, ovens to heat treat materials up to 900 degrees F and a freezer capable of -300 degrees F.
- A dimensional inspection facility capable of ultra-high accuracy measurements for quality control or full analysis of components and assemblies. In addition, metrology of machines and instruments is a division expertise.
- The water jet cutting machine, using 55,000 pounds per square inch and fine abrasive particles of garnet to cut precise parts through even two-inch thick stainless steel.
- The Laser Processing Center, which uses laser cutting, welding and etching on materials such as quartz, fused silica, plastics, carbon composites and various metals.



Wayne Jensen, of the Plastics Division in MMED, extrudes polyurethane into catheters for the Medical Technology Program.

- The vacuum process center, which recently applied the Lab-designed durable silver coating to mirrors for several of the world's major observatories.
- Consulting, to in-house groups or off-site vendors, on any stage of the fabrication process.
- NDE (ultrasonics, radiography, thermography) for large and small components of almost any material.

Design and analysis of high-precision instruments and machines, including opto-mechanical systems. Often high-precision design techniques can be applied to conventional accuracy problems for huge efficiency gains.

Error analysis of machine or instrument designs, or actual hardware.

Optics fabrication and process for small quantity or short turnaround and development.

Mike Prokosch, an MMED senior supervisor, explained the particular criteria Lab groups might use to understand when MMED is the best choice for their project. "We're probably your best alternative choice if you need:

- Quick turnaround: 'We needed it yesterday!'
- Limited product definition: 'Something sort of like this.'
- Process development: 'Can this even be done?'
- Unique capabilities: 'Wow, that's impressive!'
- Classified, radioactive or toxic materials: 'Who else?'

In addition to design and fabrication, MMED also offers their expertise and equipment in the repair, overhaul, upgrade, moving and installation, or safety specification changes to machine tools and equipment.

Despite the myriad services MMED provides, Watling emphasizes that an off-site vendor is sometimes the preferable route. "If you have a good design, plenty of time and need mass production, an off-site vendor may be the best way to go.



PHOTOS COURTESY OF MMED

Peter Thelin prepares to polish a piece of optical crystal. Thelin works in the Optics Division.

"Another part of our service is to be sure and tell our customers when we are not the best shop for the job."

To learn more about what MMED may be able to do for your program, several orientation options are available:

• Capabilities forum, Tuesday, July 17, 8:30 to 10 a.m., Bldg 543 auditorium. A detailed capabilities overview by MMED's division leader and group leaders, open to all interested parties. For further information contact Garith Helm at 2-7784 or helm2@llnl.gov.

• Recharge presentation, Aug. 14, 10 to 11:30 a.m., Bldg 321 Diamond room. Explains the MMED recharge system, expected FY02 rates, how MMED bills for services, and where the money goes. To schedule alternate times, contact Garith Helm at 2-7784 or helm2@llnl.gov.

• Tours, about two hours long, giving a hands-on look at the immense variety of MMED functions. To schedule, contact Mike Prokosch at 2-2029 or prokosch2@llnl.gov.

• MMED Website, at <http://www-eng-r.llnl.gov/mmed/home.html>. Details on many services, a feedback form, cost information and more.

SERVICES

Housecleaning service. Very thorough and reliable. References available 925-443-1632

Roofing, 28 yrs experience, fully insured, free estimates 925-454-9200

Exterior House-Painting - Over 15 yrs experience with free estimates. 925-447-5132

Hauling Service.Estate Cleanouts, Attics, Garage, Shed & Barns. Misc.... 925-373-9540

SHARED HOUSING

Livermore - room in 3BD/2BA house, full privileges, all amenities and conveniences, cable modem and furnishings available, bikepath, N/S, N/P, \$450 + 1/3 utils 925-449-3165

TRUCKS & TRAILERS

1978 - 12ft cabover camper, bathroom, stove, oven, Refrigerator, all working and in very good shape. Will Sleep 5. \$800/obo

209-892-5734

1998 - Camper Shell- LEER fits Chevy full size short bed 1988-1998 Insulated,Silver / Tinted windows, Excellent condition \$300.00 OBO 925-443-2114

1997 - Ford F150 super cab, long bed w/liner, 3 door, AT, AC, PW, new tires, alarm system. \$15,000 925-447-4711

1983 - Tent Trailer- Viking, sleeps 6, good condition, \$1,500/OBO. 209-957-4639 or 925-706-8179

1993 - Jeep Cherokee Country, 4.0L V6, 4WD, AC, PS, CC, PW, PDL, AM/FM/Cass, tow pack, new tires, one owner, 133k miles, Excellent condition. \$6,500. 510-582-5097

1988 - GMC full-size Jimmy 4x4. Great condition, new transmission, new tires, 123K miles. Tow pkg, tinted windows, ps, pb, automatic 350. \$8200. 925-447-6784

1969 - 4WD Chevrolet K-5 Blazer, Great Condition, New 33in. Goodyear All Terr, 454, SM465 Granny Low 4Spd, NP205 T-Case, Fully Convertible Hard Top. \$4k 209-955-1155

VACATION RENTALS

HAENA, KAUAI - - Private house and/or studio on the scenic north coast near Hanalei Bay - great beaches, hiking, boating and golf. House-\$125/day, studio-\$75/day 831-479-3441

South Lake Tahoe, NV - South Lake Tahoe Vacation Cabin. Sleeps 12. Near Marina, Heavenly, Casinos.. 925-449-2112

SOUTH LAKE TAHOE - 3 Bedroom 2 Bath Chalet, nicely furnished, all amenities,Homeowners park w/Lake, tennis etc., Great for Families, Few Weekends Left, Reserve Now!! 209-599-4644

Twain Harte - Fully furnished.2bdr 2full bath. Dishwasher, microwave, cable TV,VCR,washer,dryer and more.Close to Pinecrest Lake.\$150wknd \$300wk. 925-443-2808

SEA RANCH - Oceanview home. No smoking. No pets. Adults only. 2BR(KQ)/2BA 1700sqft. Hike. Bike. Whale watch. Kayak. Swim. Tide pool. 925-443-5086

Kihei, Maui - Oceanfront luxury condo

w/all amenities. Large pool, bbq, tennis courts, putting green. Excellent location, low LLNL rates. 925-846-8405

Eagle Lake Great trout fishing and family fun. 530-825-2131 inquire about Brazil 209-543-1845

Capitola - 3 bedroom house near beach, completely furnished. Week of July 29 to Aug. 4 \$700. 925-447-3611

Soda Springs/Donner Summit, Classic A frame, 2BR/1BA+Loft, sleeps 8, conv to biking, hiking, everything. \$250 wknd call for availability 209-422-0649

WANTED

Wanted. Inexpensive 35mm Black and White darkroom equipment for student. Please call. 925-449-5441

Beach house rental in Capitola,Soquel,Rio Del Mar, Aptos or any near by area with beach access from 8-11 to 8-18-01 925-426-8224

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Golf clubs, mens left hand, starter set plus others. 925-600-0082

Microwave and computer (PC or MAC) in working condition donate to boys facility Stockton (OH CLOSE Juvenile Hall for boys). Call evenings. 209-832-7112



LOVE

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dream.” she told a packed auditorium in Bldg. 123 Love, who is an adjunct professor of surgery at UCLA and medical director of the Susan Love M.D. Breast Cancer Foundation, spoke at the Lab Tuesday as part of the Director's Distinguished Lecture Series. Her talk was also the final installment in the Lab's monthlong Cancer Awareness Campaign.

Her presentation, “Wishful Thinking Is Not Enough,” was engaging, informative and often humorous. She spoke off the cuff for more than an hour on a wide range of subjects, from describing new research on improving detection, treatment and recovery to hormone replacement therapy. She answered questions from the audience for nearly a half hour more in the auditorium and spent another 30 minutes signing books and answering still more questions.. Scores of women in the auditorium not only had copies of her books for her to sign afterward, but also took copious notes during her talk.

Love, who was appointed by President Clinton to the National Cancer Advisory Board and is one of the founders and a director of the National Breast Cancer Coalition, calls today's treatment of cancer — surgery, chemotherapy and radiation — “slash, burn and poison.”

“They are very crude. But it's all we have. If I had cancer today, I'd be first in line for those treatments,” Love said. “We've been thinking of cancer cells as if they're foreign invaders and we have to blast them away. But these are our own cells gone crazy.

“Maybe they're not all irrevocably bad. Maybe we can rehabilitate them, give them food and sunshine and they will behave normally.”

For too long, she said, cancer cells have been studied in isolation. By studying cancer cells and how they interact with healthy cells, researchers may be able to determine how to change their behaviors, she said.

Researchers are also looking into how to “put cancer cells to sleep” for 10 or 20 years, and believe one of the ways to do that is through hormones. There are new hormonal drugs that are now being studied, she said, noting that tamoxifen has been shown to prevent breast cancer from coming back when given for five years.

“We're moving into control instead of kill,” Love noted. “Treatments are shifting from chemotherapy for



ALI CARRIGAN/NEWSLINE

Susan Love (right) spent time after her DDLS presentation answering questions signing autographs for employees and retirees, in this case, Marlys Hanson.

everyone to treatments for tumors sensitive to hormones. They are treatments targeted only to the cells that are abnormal.”

New research is also starting to look at how to eliminate some of the side effects of the harsher treatments, such as chemotherapy. Love refers to this treatment as a “poison” that not only kills the cancerous cells, but destroys healthy tissue as well.

Too often, breast cancer survivors who complain after treatment about swollen arms and limited mobility, fuzzy thinking and other uncomfortable side effects are told, “you're lucky to be alive, dear,” Love said.

“It's beyond ‘you're lucky to be alive.’ We're finally getting to the point that we realize we need to pay attention to the side effects of treatments.”

One of the biggest side effects is premature menopause, which can lead to other health problems, Love said. “That's a whole other area we're just starting to figure out,” Love said. “I've been asked why, as a surgeon, I'm looking into menopause. Well, my patients are asking me about it, and I'm 53 and flashing,” she added, drawing a laugh from the crowd.

“After menopause, our ovaries don't shrivel up and fade away. When they are done with reproduction, they shift into a different function and still produce hormones into your 80s,” Love said.

Contrary to popular belief, this declining hormone production can be enough for most women, she added.

She also discussed imaging methods, such as mammograms. By the time tumors are seen on mammo-

grams, they have been there eight to 10 years, Love said. Mammograms are most effective for women over 50, she said, because younger women have denser breast tissue, making it difficult to spot tumors.

“When you go through menopause, you lose breast tissue. It turns to fat and cancer shows up great against fat. We need something that will show cancers in younger women,” Love said.

She has spent much time studying ductal cancer, which is breast cancer that starts in the milk ducts

“I want to find those cells before they're criminals, when they are cells that are just thinking about going bad,” Love said.

She has developed a method to insert a tiny catheter into a breast duct to extract cells. It's called ductal lavage and is now FDA-approved for high-risk women. It is being used at a number of clinics, including UC San Francisco.

Right now, it's good for providing additional information for women who are at a high risk for breast cancer, but Love hopes it will lead to figuring out how breast cancer starts and, ultimately, how to prevent it.

“A lot more research needs to be done,” she noted.

During her talk, she also addressed hormone replacement therapy in menopausal women, although she objects to the name of the treatment.

“The way you position something really affects how you think about it. With hormone replacement, you're saying premenopausal women are normal and we have to get postmenopausal women back to normal. But menopausal women don't need that high level of hormones. We're now starting to figure out that much lower doses may be enough for older women who don't need as much,” Love said. “If you don't have breast cancer, you can take hormones for two to five years for symptom relief and then taper off.”

New studies are showing that long-term hormones do not necessarily reduce an older woman's risk of heart disease and osteoporosis, she said.

Lifestyle changes are the best defense, she noted. “Exercise helps prevent heart disease, osteoporosis and you feel morally superior doing it,” she said, again drawing laughter from the crowd.

Other changes include following a low-fat diet and not smoking. “You should have lifestyle changes first and then add drugs if they are needed,” she added.

Love's talk will be rebroadcast on Lab TV channel 2 on Thursday, July 19, at 10 a.m., noon, 2, 4 and 8 p.m. and Friday, July 20, at 4 a.m.

DIRECTOR'S OFFICE

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cussions are detailed below.

The Lab environment

Despite myriad challenges we have recently faced, the Laboratory's scientists and engineers generally remain positive about the quality of life at the Laboratory and its world-class science and computer expertise, and are optimistic about their collective ability to improve the environment for science and technology in the future.

What the focus group members seek most is a return to the flexibility of a decade ago, when scientists felt they had more intellectual “elbow room” to work on new or emerging scientific ideas. Decreased funding — whether for programs, inviting scientific speakers to the Lab or attending scientific meetings — has created a feeling among scientists that opportunities for continued scientific growth are becoming limited.

Concomitant with decreased funding is an increased emphasis on oversight, safety and security regulations, excessive paperwork, and often over-zealous interpretations of regulations.

The focus group members recognize the competitive job market and high cost of living in the Bay Area have hindered the Lab's ability to recruit and retain employees. Compounding this problem (which has the potential of making the Lab a less-attractive employer), is increased management and oversight by DOE, Congress, and other outside forces.

The early career scientists felt their managers were so overburdened with administrative requirements that they were becoming full-time administrators with reduced opportunities to participate in research management.

Focus group participants reported that in areas where guidance is vague, Laboratory staff has become overly cautious in following regulations that have

unclear boundaries. Laboratory employees take security and safety very seriously. This has, at times, led to an overly conservative approach to implementing guidance and directives, and may have resulted in more restrictive, self-inflicted requirements than were originally intended by the rules. Examples of this include treatment of foreign nationals, sensitive-country restrictions, sensitive but unclassified information, export control, and enforcing “one-size-fits-all” training requirements.

Participants expressed general consensus in favor of protecting the benefits and the culture that the University of California brings to the Laboratory. Members of the focus groups urged the Laboratory to make greater use of the University in recruitment and retention, improving morale, continuing to ensure the quality of Laboratory research through peer review, broadening collaborations, encouraging publications, promoting outside recognition of the outstanding science at the Laboratory, as well as protecting and enhancing science for the next generation of researchers at Livermore.

Recommendations generated from the three focus day groups at each of the three NNSA national laboratories have now been combined and analyzed. The analysis helped identify common issues and was used to identify and define action items for the laboratories and NNSA management.

The next steps

Director Bruce Tarter and I are committed to improving the work environment for science and technology, including empowerment of our scientific managers in a manner that can ensure a healthy, inspired, and dedicated workforce, and to attract new scientists and engineers to carry out the DOE and NNSA critical national security and science and technology missions.

Through the employee survey just completed, we hope to gather additional detailed information about how employees view the quality of work life issues at

LLNL. Once all of the data are tabulated, the Lab will identify priority issues and develop plans to address them. We will continue to work with NNSA, Los Alamos, and Sandia to find ways to improve the workplace environment across the complex.

Intellectual resources remain the greatest assets of the Laboratory — a cross-disciplinary team approach and innovative thinking are still very much a part of Lab culture. Through the suggestions of these focus groups and the employee survey, the Laboratory will work to address these issues and maintain the spirit of multidisciplinary research that has made the Lab what it is today — one of the premier research facilities in the world.

Jeff Wadsworth is the deputy director for Science and Technology.



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